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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,070	08/02/2001	Joseph C. Barrett	42390.P4934D2	7988

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EXAMINER

COLLINS, DEVEN M

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 02/07/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/921,070

Applicant(s)

BARRETT, JOSEPH C.

Examiner

D. M. Collins

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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## DETAILED ACTION

### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 16-42 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,064,117. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of application 09/921,070 show a plastic ball grid array assembly. Similarly, from U.S. Patent No. 6,064,117, a plastic ball grid array assembly is shown. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the need for overcoming PBGA assemblies being susceptible to mechanical damage.

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*Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 16-42 are rejected under 35 U.S.C. 102(b) as being unpatentable over Bright et al. (6,127,726, dated 10/3/00).

Bright et al. show the apparatus as claimed in the Figures 1-8 with corresponding text. In re claim 16, Bright et al. disclose an apparatus 700 comprising:

a substrate 714; a chip 708 mounted on the substrate 714; and  
a mold cap 720 disposed over the substrate 714 such that the mold cap at least partially covers the chip, the mold cap having an extension extending into a corner section of the substrate 714.

In re claim 17, Bright et al. disclose the apparatus 700 of claim 16, wherein the extension is a rib structure.

In re claim 18, Bright et al. disclose the apparatus 700 of claim 16, wherein the extension extends to an edge of the substrate 714.

In re claim 19, Bright et al. disclose the apparatus 700 of claim 16, wherein the extension extends into the corner section of the substrate 714 without extending to an edge of the substrate.

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In re claim 20, Bright et al. disclose the apparatus 700 of claim 16, wherein the mold cap 720 has chamfered edges.

In re claim 21, Bright et al. disclose the apparatus 700 of claim 16, comprising a plurality of solder balls 712 on a surface of the substrate 714 opposite the mold cap 720.

In re claim 22, Bright et al. disclose the apparatus 700 of claim 21, comprising a plurality of solder balls 712 on the surface of the substrate 714 in an area directly opposite the chip 708.

In re claim 23, Bright et al. disclose the apparatus of claim 21, wherein all solder balls 712 on the surface of the substrate 714 are spaced from areas directly opposite an edge of the chip 708.

In re claim 24, Bright et al. disclose an apparatus 700 comprising:  
a substrate 714; a chip 708 mounted on the substrate 714; and  
a mold cap 720 disposed over the substrate such that the mold cap at least partially covers the chip, the mold cap 720 having a plurality of extensions each extending into a respective corner section of the substrate 714.

In re claim 25, Bright et al. disclose the apparatus 700 of claim 24, wherein each extension is a rib structure.

In re claim 26, Bright et al. disclose the apparatus 700 of claim 24, wherein each extension is a rounded structure.

In re claim 27, Bright et al. disclose the apparatus 700 of claim 24, wherein each extension is a rounded corner of the mold cap 720.

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In re claim 28, Bright et al. disclose the apparatus 700 of claim 24, wherein at least one extension extends to an edge of the substrate 714.

In re claim 29, Bright et al. disclose the apparatus 700 of claim 24, wherein at least one extension extends into a respective corner section of the substrate 714 without extending to an edge of the substrate.

In re claim 30, Bright et al. disclose the apparatus 700 of claim 24, wherein the mold cap has chamfered edges.

In re claim 31, Bright et al. disclose the apparatus 700 of claim 24, comprising a plurality of solder balls 712 on a surface of the substrate 714 opposite the mold cap 720.

In re claim 32, Bright et al. disclose the apparatus 700 of claim 31, comprising a plurality of solder balls 712 on the surface of the substrate 714 in an area directly opposite the chip 708.

In re claim 33, Bright et al. disclose the apparatus 700 of claim 31, wherein all solder balls 712 on the surface of the substrate 714 are spaced from areas directly opposite an edge of the chip 708.

In re claim 34, Bright et al. disclose an apparatus 700 comprising:  
a substrate 714; a chip 708 mounted on the substrate 714; and  
a mold cap 720 disposed over the substrate 714 such that the mold cap at least partially covers the chip, the mold cap 720 having an extension adjacent a corner section of the substrate 714.

In re claim 35, Bright et al. disclose the apparatus 700 of claim 34, wherein the extension is a rib structure.

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In re claim 36, Bright et al. disclose the apparatus 700 of claim 34, wherein the extension is a rounded structure.

In re claim 37, Bright et al. disclose the apparatus 700 of claim 34, wherein the extension is a rounded corner of the mold cap 720.

In re claim 38, Bright et al. disclose the apparatus 700 of claim 34, wherein the mold cap 720 has a plurality of extensions each adjacent a respective corner section of the substrate 714.

In re claim 39, Bright et al. disclose the apparatus 700 of claim 34, wherein the mold cap has chamfered edges.

In re claim 40, Bright et al. disclose the apparatus 700 of claim 34, comprising a plurality of solder balls 712 on a surface of the substrate 714 opposite the mold cap.

In re claim 41, Bright et al. disclose the apparatus 700 of claim 40, comprising a plurality of solder balls 712 on the surface of the substrate 714 in an area directly opposite the chip 708.

In re claim 42, Bright et al. disclose the apparatus 700 of claim 40, wherein all solder balls 712 on the surface of the substrate 714 are spaced from areas directly opposite an edge of the chip 708.

### *Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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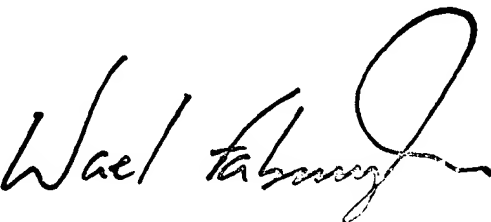
5. Any inquiry concerning this communication or earlier communications for the examiner should be directed to Examiner Deven M. Collins whose telephone number is (703) 305-7840. The examiner can normally be reached on Monday-Friday from 6:30 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy, can be reached on (703) 308-4918. The fax phone number for this Group is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

DMC

January 27, 2002

  
SUPERVISORY PRIMARY EXAMINER  
TECHNOLOGY CENTER